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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,947	05/22/2001	Joachim Gloger	510.1007	9743

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EXAMINER

TANG, SON M

ART UNIT PAPER NUMBER

2632

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,947

Applicant(s)

GLOGER ET AL

Examiner

Son M Tang

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Gutta et al. [US 6,424,273].

Regarding to claim 15: Gutta et al. disclose a device for detecting road users and obstacles as a function of camera images to determine their distance from an observer, and to classify them, comprising:

- a distance measuring sensor unit (18);
- a mono-image camera 12 coupled to the distance sensor unit 18;
- a first classifying unit (22) interposed between the distance sensor 18 and the camera 12; and a second classifying unit (met by identifier unit 20) downstream from the sensor unit and the camera [as shown in Fig. 1].

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-9, 12-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutta et al. [US 6,424,273].

Regarding to claim 1: Gutta et al. disclose a method for detecting road users and obstacles as function of camera images [12,14 and 16] and determine their distance from an observer (vehicle) and to classify them, comprising the steps of:

- identifying regions (which met by regions 12', 14' and 16' around vehicle, such as sides, front and back) within a two-dimensional camera image, using a classifier (met by object identifier 20) designed for detecting road users and obstacles within the regions (such as pedestrian, car, bus, motorcycle etc.) [cited in col. 3, lines 34-67];

- marking and ranging the identified regions using a distance measuring sensor 18 located on the vehicle, with respect to their distance from the observer [as cited in Fig. 1, col. 4 lines 4-11 and col. 5, lines 6-10];

- identified regions using a type classifier (met by identifier 20) which identifies the type of objects observed by the camera (or driver) that cited in col. 3, lines 34-40.

Gutta et al. does not specifically disclose that marking and ranging, in a subsequent step or subsequently type classifying. However, as long as the system is detected, ranged and identified object in the regions and display to observer as shown in Fig. 3. It would have been obvious of one having ordinary skill in the art at the time the invention was made to configure each component in a subsequent step, for better performance, since each component data is relatively to each other.

Regarding to claims 2, 9: Gutta et al. disclose the image cameras [12,14 and 16], since it is an only one camera to collect data at each region. Thus, it is obviously generates two-dimensional image.

Regarding to claim 4: Gutta et al. does not specific disclose a hyperpermutation network system. However, it is obvious of matter of design choice to one having ordinary skill in the art at the time the inventions was made to employ any known network system in the invention, as long as the system functions and performs well. Further more, the claimed hyperpermutation network is not support by any evidence fact to show that the system is performing better.

Regarding to claim 5: Gutta et al. disclose a box algorithm met by an image processor [22] uses to identify region [as shown in Fig. 1].

Regarding to claim 6-8 : Gutta et al. further disclose the distance determination unit 18 to determines a , can be used in selection of radar sensor and camera system [as cited in col. 4, lines 4-23].

Regarding to claims 12-13: Gutta et al. further disclose that the regions to be subjected to a type classification (which met by the type of vehicles in the identified region (left side, right side and rear of vehicle and distances as shown in Fig. 3).

Regarding to claims 14 and 17-19: Gutta et al. further disclose a device and method in a vehicle comprising a risk calculator that output to display 24, for early detection of accident which avoids change lane with a blind spot as shown in [Fig. 1-3] .

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gutta et al. [US 6,424,273] in view of Gutta et al. [US 6,424,272].

Regarding to claim 3: Gutta et al. disclose the instant invention as described above, Gutta et al. further disclose in other reference # 6,424,272 that the relative speed is determined by the relative speed identifier [15] as shown in Fig. 1 and col. 2, lines 40-54]. Since, both system is for the same purpose and from the same inventor. Thus, it would have been obvious of one having ordinary skill in the art at the time the invention was made to include a relative speed identifier with distance identifier, for the benefit of increase safety and easy to recognize the position of object while the vehicle is running.

4. Claims 10- 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutta et al. [US 6,424,273] in view of Nishio [US 5,541,590].

Regarding to claims 10-11: Gutta et al. disclose the instant claimed invention except for: a radial-basis function and a support vector machine. Nishio teaches a system that uses neural networks for classifying the possibility of crash, the system inheres of a radial-basis function and support vector machine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a neural network as suggested by Nishio into the system of Gutta for the advantage of accurate.

Allowable Subject Matter

5. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

1. Applicant's arguments filed 4/20/04 have been fully considered but they are not persuasive.

Applicant argues/ Examiner explain:

In claim 15,

1, -in Gutta, information from distance determiner 18 is not passed to object identifier 20.

Gutta clearly shows that image processor provides its output signal to the distance determiner and object identifier 20 [see col. 2, lines 40-42], in doing that, the type of object and relative distance to observer is determined.

2, -there are not two separate classifying units.

there are two separate classifiers in Gutta, first classifier is an image processor 22 which processing image from cameras, second classifier is an object identifier 20, identifies type of object.

3, -the interaction of the two separate classifying units permits rapid and reliable detection.

there is no factual evidence in the specification shows that, the interaction of two separate classifying units permits rapid and reliable detection.

In claim 1,

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1, -Gutta, does not disclose type classifying subsequent to a marking and ranging step.

marking and ranging the identified region is acquired by distance sensor 18 [see col. 4, lines 5-23].

2, -Gutta does not show, identifying regions within a two-dimensional camera image.

Image cameras (12, 14, 16) show two-dimensional images in Fig. 3, where are front view, side view and back view of objects are showing.

3, -no in order of the claimed invention.

There is no interaction between calculating distance and type classifying, which for carries out function of in the order step, at least in claim 1.

In claim 4,

1, -a hyperpermutation network advantageously permits a pixel-based classification

there is no evidence to support that hyperpermutation network is a different classifier, to any other known classifier.

In claim 14.

1, -Gutta, does not show a risk calculator.

Gutta shows a risk calculator (met by display 24) which displaying the real image and distance to observer.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

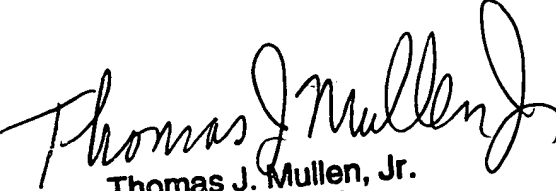
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son M Tang whose telephone number is (703)306-5970. The examiner can normally be reached on 4/9 First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J Wu can be reached on (703)308-6730. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Son Tang



Thomas J. Mullen, Jr.
Primary Examiner
Art Unit 2632